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| EXAMINER LANGMAN, JONATHAN C | | | | |
| ART UNIT 1794 | | PAPER NUMBER | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary

Application No.

10/542,862

Applicant(s)

COOK ET AL.

Examiner

JONATHAN C. LANGMAN

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-11 is/are pending in the application.
- 4a) Of the above claim(s) 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Newly amended claim 11 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 11 is directed to a method of making a glazing panel comprising a pane of glass and two components soldered together with a lead free stress modified solder. The structure of claim 1 comprises a glazing panel comprising a pane of glass and a first electrically conductive component on a surface of the pane of glass with a lead free stress modified solder and a second conductive component thereon. The method of claim 11 requires the process of soldering, where as the article of claim 1 may be made by a materially different method other than soldering, such as laminating the components together with a conductive paste there between.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 11 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

Claims 1 and 4-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The applicant amended the claim to read that the stress modifier comprises antimony and/or bismuth (emphasis added). The applicant is not supported for the combination of both stress modifiers in the solder. The applicant is only supported for the stress modifiers in the alternative.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pereira (US 6,253,988) in view of Kitajima et al. (US 6,184,475) or Gonya et al. (US 5,368,814).

Regarding claims 1, 9 and 10, Pereira teaches that "Windshields and rear windows of vehicles such as automobiles often include electrical devices located within or on the glass. Typically, the electrical devices are antennas or defrosters. In order to provide an electrical connection to such an electrical device, a small area of metallic coating is applied to the glass which is electrically connected to the electrical device. An electrical connector for connecting to a lead or the lead itself is then soldered to the

metallic coating on the glass." (col. 1, lines 10-18). Pereira then teaches a lead free solder (col. 3, lines 17) in order to reduce damage to the glass, such as a solder that has small amounts of tin in order to prevent cracks in the glass pane (col. 1, line 30 and col. 3, lines 3-10). The solder comprises a composition of tin in an amount of less than 50%, and indium in an amount of more than 50 weight percent is indium (col. 1, lines 35-40 and col. 2, lines 50-65).

Pereira et al. are silent to the stress modifier being Antimony or Bismuth. However it is the Examiners position that any known low tin, lead free solder would have been an obvious alternative to the low tin, lead free solder of Pereira.

Known lead free solders are taught by both Kitajima and Gonya et al. Gonya et al. teach a lead free tin bismuth solder alloy for joining circuitization lands and pads, comprising tin in an amount of 42-48 wt percent, and Bismuth in an amount of 48-56 wt percent (Gonya et al., col. 3, lines 60-col. 4, lines 15, also see col. 2, lines 55-60). Kitajima et al. teach connecting two electrical components on a substrate by a lead free solder comprising mixtures of indium, tin, and bismuth (Kitajima, col. 5, lines 30-45). Exemplary and comparative examples of the compositions of the solder of Kitajima are shown in Figure 1, wherein one example is Tin-42 wt %, Bi-58 wt %, and In-0 wt %, thus showing tin in an amount of less than 90 weight percent.

It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use the lead free solders as taught by Kitajima and Gonya et al. as alternatives to the solder of Pereira et al. as they are functional equivalents in the art of connecting two electrical components.

Although the solders taught by Kitajima and Gonya do not refer to bismuth and antimony as stress modifiers, these solders share compositions similar to those instantly claimed, and therefore are expected to behave in similar manners to those instantly claimed. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a *prima facie* case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Regarding claim 4, it is expected and inherent that since the vehicular glazing panel of Pereira et al. is the same as the instantly claimed vehicular glazing panel, that it will exhibit the same fall in the stress as generated in the pane of glass, after an initial rise, described as a function of time, as instantly claimed. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a *prima facie* case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not

necessarily posses the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Regarding claim 5, Pereira is silent to the use of a fired ink band around the periphery of the pane of glass wherein the first electrically conductive component at least partially exists. However, it is well known and obvious in the art, as evidenced by the applicant on page 2, first paragraph), to place bus bars (first electrically conductive layers) "on a top of a band of fired, printed ink, which is preferably black and which extends around the periphery of the pane of glass. Such a band is known as an obscuration band." This is done in the art, as is known, in order to hide the conductive layers from view during vehicle operation.

Regarding claims 6 and 7, the applicant defines the glass as toughened and as a laminate, Pereira is silent to the use of toughened or one-ply laminates as the glass substrate, however, the applicant teaches that these substrate are obvious known alternatives in the art, and thus functional equivalents (instant specification, page 2 last paragraph to page 3, first paragraph). It is expected and inherent that since the vehicular glazing panel of Pereira et al. is the same or substantially the same as the instantly claimed vehicular glazing panel, that it will exhibit the same stress faults for the respective substrates. See *In Re Best* as applied above.

Regarding claim 8, it is expected and inherent that since the vehicular glazing panel of Pereira et al. is the same as the instantly claimed vehicular glazing panel, that it will exhibit the same stress fault wherein, the stress fault manifests itself as a

structural defect in the interface between the solder and the first electrically conductive component. See *In Re Best* as applied above.

Response to Arguments

In regards to the objection to the specification, the applicant's explanation is sufficient, and therefore the objection is removed.

The 101, and 112 rejections of claim 11 are removed in light of the applicants amendment. However, the newly amended claim is to a method which is patentably distinct from the article of claims 1 and 4-10 and, accordingly, is withdrawn from consideration.

The rejection over Pereira alone is removed in light of the applicant's amendment to remove Indium as one of the stress modifiers. Although Pereira teaches trace amounts of antimony or bismuth, these modifiers are not present in high enough concentrations in order to inhibit the occurrence of stress faults in the pane of glass as is required in the instant claim.

The rejection over Sanada alone is removed because Sanada is silent to the amount of Tin that is present in the lead free solder.

In regards to the 103 rejection of Sanada, The previously based 103 rejection was based on the prior art taught by Sanada. In light of the applicants amendment the rejection was removed.

The applicants amendment to claim 1, presented new combinations that were not searched or considered before and prompted a new search and further consideration of the prior art by the Examiner, thus necessitating a new rejection.

The Examiners' new rejections are not based on modifying the solder of Pereira, but are instead based on using known and obvious lead free solders as alternatives to the lead free solders of Pereira due to the functional equivalence in the art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN C. LANGMAN whose telephone number is

(571)272-4811. The examiner can normally be reached on Mon-Thurs 8:00 am - 6:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCL

/Timothy M. Speer/
Primary Examiner, Art Unit 1794